C. B. WRIGHT.

VENDING MACHINE.

APPLICATION FILED MAR. 12, 1917.

1,344,160.

Patented June 22, 1920.

3 SHEETS—SHEET 1.

Fig. 2.

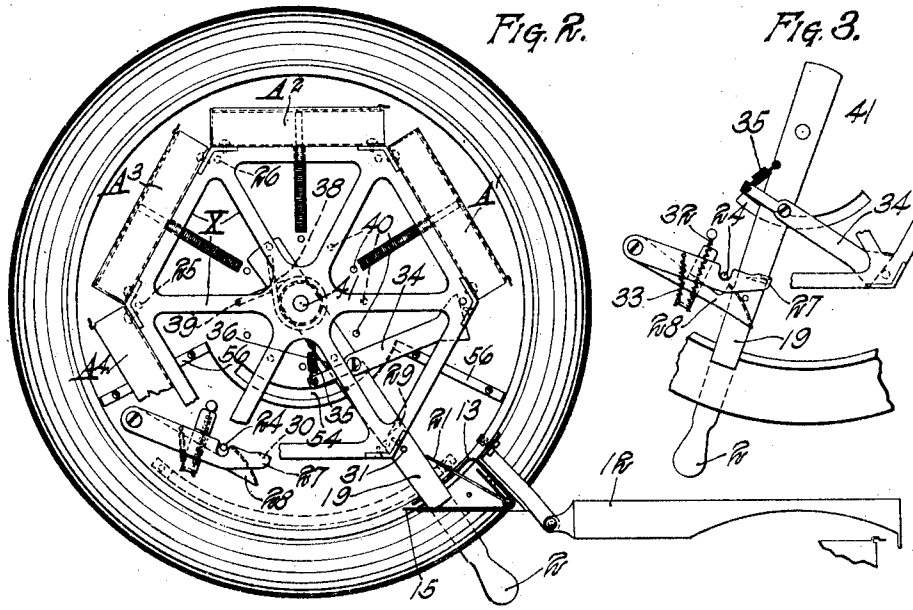

Fig. 3.

Fig. 1.

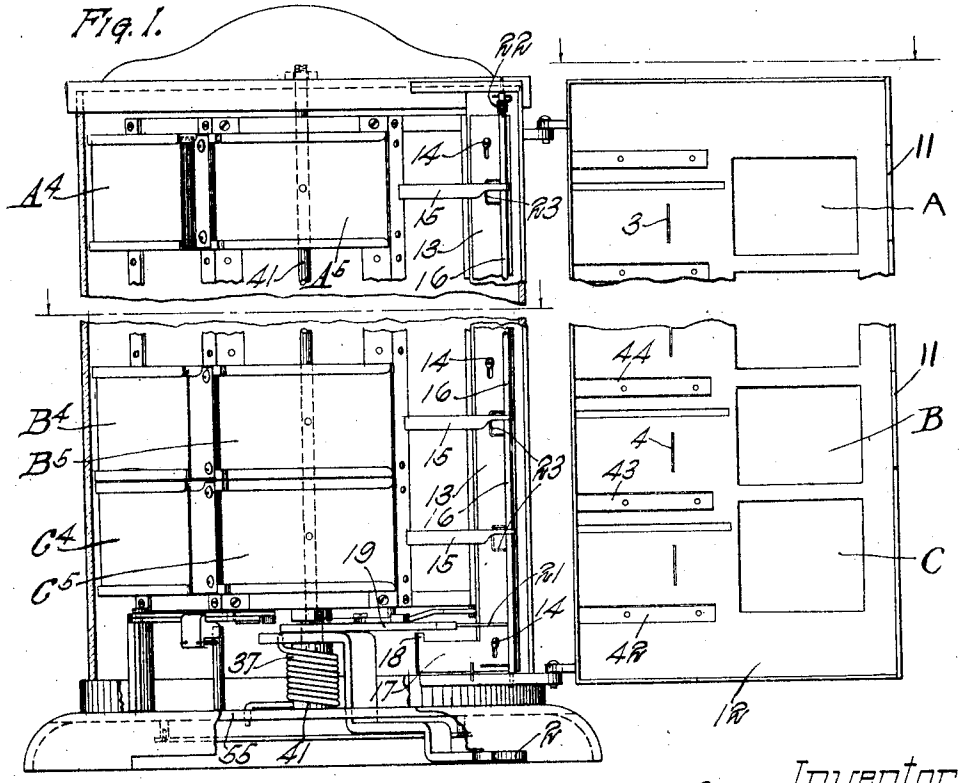

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Fig. 5.

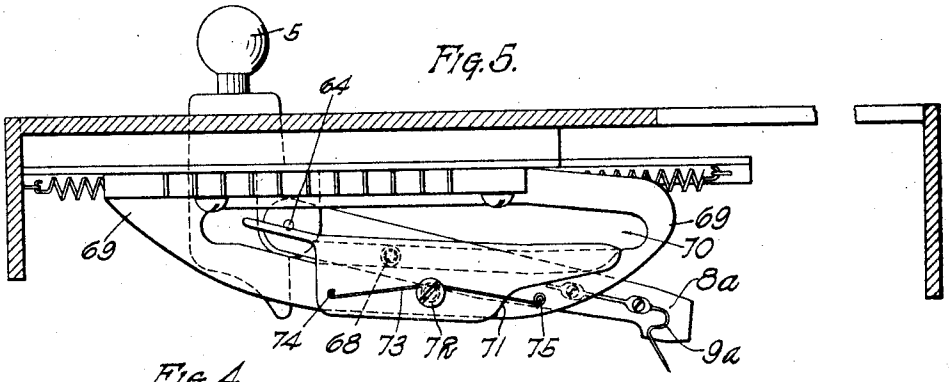


Fig. 4.

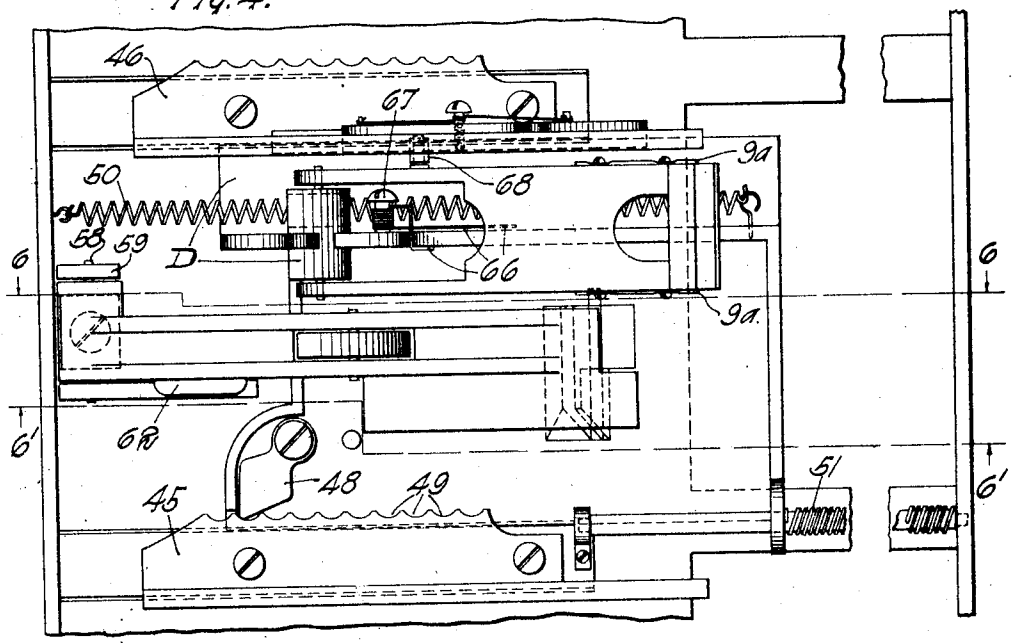
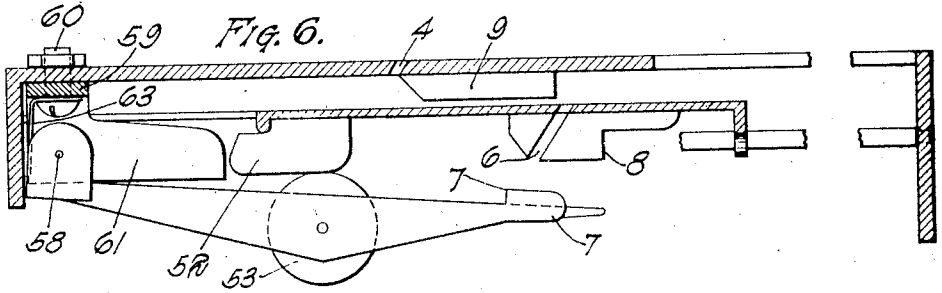


Fig. 6.



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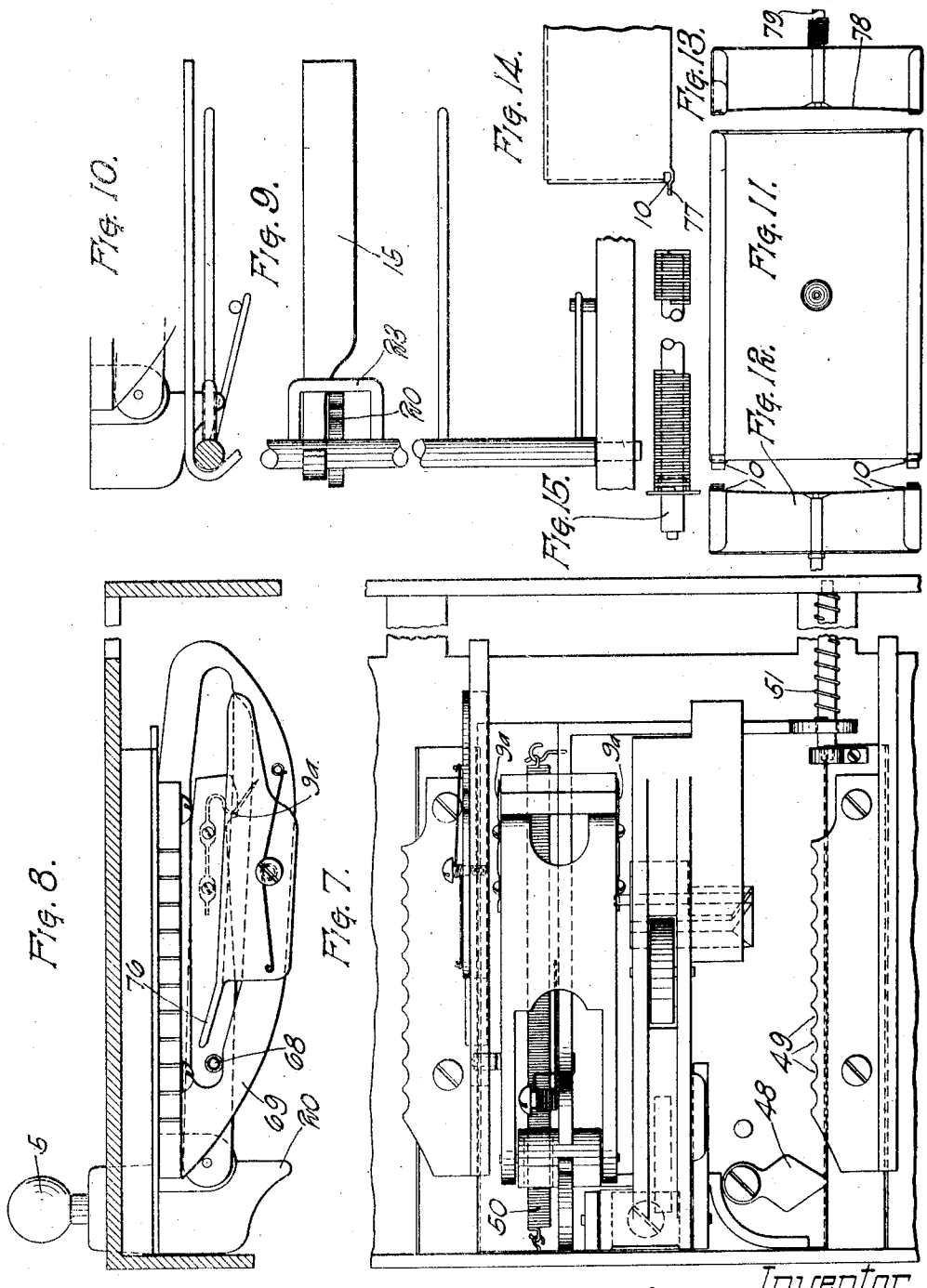
3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

CHARLES B. WRIGHT, OF CHICAGO, ILLINOIS, ASSIGNOR TO POST CARD VENDING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

VENDING-MACHINE.

1,344,160. Specification of Letters Patent. Patented June 22, 1920.

Application filed March 12, 1917. Serial No. 154,073.

To all whom it may concern:

Be it known that I, CHARLES B. WRIGHT, a citizen of the United States of America, and resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vending-Machines, of which the following specification, together with the accompanying drawings, is a full and clear disclosure.

My invention relates to coin controlled vending machines adapted for selling any commodity desired. The particular type shown is specially adapted for selling commodity units such as envelops, post cards, or the like.

The object of my invention is to provide a vending machine in the nature of an improvement on machines of the general type shown in United States Letters Patent No. 1,208,921 issued to B. M. Davis, December 19, 1916, in which the lever for rotating the commodity holder carriage instead of projecting out as does the lever in said patent, through an opening in the door, it does so through an opening elsewhere.

Another object of my invention is to provide an improved form of commodity holder.

Another object is to provide a new form of commodity extractor.

Another object is to provide a new spring arrangement for controlling the lever by means of which the commodity carriage is rotated and a new ratchet construction for insuring that the commodity carrier is rotated in one direction but not in another.

Another object is to provide an improved form of frame for inclosing the device.

It is also an object to provide certain details and features of improvement tending to increase the efficiency and serviceability of a device of the above character.

The means for accomplishing the foregoing and other useful ends are hereinafter more fully set forth and claimed.

Referring to the drawings, Figure 1 is a front elevation of the machine.

Fig. 2 is a top view of the same.

Fig. 3 is a detail view of the controlling lever.

Fig. 4 is a rear view of one of the card extractors, of which there are several on the door of the machine. This view shows the extractor partly operated.

Fig. 5 is a top view of the section of the door shown in Fig. 4.

Fig. 6 is a top view of that section of one of the extractors shown in Fig. 4 between lines 6—6 and 6′—6′.

Fig. 7 is a view similar to that of Fig. 4 with the extractor at normal.

Fig. 8 is a view similar to that of Fig. 5 with the extractor at normal.

Fig. 9 is an elevation of a detail of a common locking mechanism.

Fig. 10 is a top view of the same.

Fig. 11 is a front view of one of the commodity units holders.

Fig. 12 is a view of the left end of the holder from left to right, Fig. 11.

Fig. 13 is a view of the other end looking from right to left Fig. 11.

Fig. 14 is an enlarged view of the left end of the holder, Fig. 11.

Fig. 15 shows the rod and spring by means of which the plate behind the cards is always kept pressed forward whereby the units are always kept within the reach of the extractor.

The operation of the extractor is as follows: The carriage X, Fig. 2, upon which the units are kept may be rotated step by step through the medium of the lever 2, Figs. 2 and 1. The lever is shown in Fig. 3 in its advanced position; that is, at the limit of its stroke forward, at which point it engages the carriage, which latter is rotated in a counter-clockwise direction as the lever is returned to its normal position. This advancing operation upon the carriage may be continued indefinitely until the customer locates the unit that he wants. It may be noted that it takes six operations of the lever to operate the cylinder once thereby exposing all of the commodities through the windows A, B, etc., in the door of the device. If the customer locates a unit in the window A, for example, he deposits a coin in the coin slot 3, Fig. 1. If a unit such as a card appears in the window B the coin will be deposited in the corresponding coin slot 4, Figs. 1 and 6, etc., there being a corresponding slot for each window, and a corresponding card extracting mechanism, the details of which are shown in Figs. 4, 5, 6, 7 and 8. If a coin is deposited in the slot 4, Fig. 6, the purchaser then proceeds to slide the extracting mecha-

nism through the medium of the knob 5, Fig. 5, which is moved to the right in said figure. In Fig. 1, it would be moved to the left. When a coin is deposited it falls into the channel 6, Fig. 6, against the latch 7, while the angled end thereof is in locking relation with the catch 8 of the extractor D. The purchaser will now move the knob 5 to the left whereupon the coin is carried under the piece 9 just beyond the slot 4 riding on the surface thereof, thereby forcing the latch 7 out of the path of the extractor. The extractor is provided with an arm 8^a near the forward end of which there is provided the pin points 9^a or any other suitable device which engage the topmost card in the pack held in place behind the window B, in this instance. The cards are distributed in the holders A′, A^2, etc., B′, B^2, etc., C′, C^2, etc., arranged in tiers as shown, one tier corresponding to each of the windows A, B, etc. Assuming that the card is found in the holder B^5, the arm 8^a will be drawn across so as to engage the topmost card forcing it to the left of the purchaser out of the card case by way of exit 10, see Figs. 11, 12 and 14. This exit 10 when the card is being extracted is in juxtaposition to a slot 11 in the door 12, see Fig. 1. It will be understood that there is a corresponding slot for each tier of card extractors as indicated in the drawings. In order to insure proper operation of the device there is provided means through the medium of which the extractors are locked, whenever the lever 2 is being used to rotate the carriage and vice versa. Whenever the extractor is operated the lever 2 is locked. The locking device for the arm 2 includes a plate 13, Figs. 1 and 2 which may be slid up and down on the pins 14. This plate is provided with a set of arms 15 which are curved about the rod 16 as a center. On its lower end the plate has an arm 17 on the end of which latter there is a projection 18 which whenever the plate is raised, rises in the path of the arm 19 which is rigid with the arm 2 and prevents the arm 2 from being rotated. The plate 13 is raised through the instrumentality of the arms 15, whenever an extractor is operated because, as indicated in Fig. 9, whenever an extractor is shifted to the right, Fig. 9, the member 20, Figs. 9 and 8, which is rigid with the extractor moves under the arm 15 associated with the member 20 raises the plate 13 thereby locking the arm 2. On the other hand whenever the lever 2 is moved to the left, Figs. 2 and 1, the arm 19 upon leaving the arm 21 which is rigid with the rod 16, permits the spring 22 coiled about the upper end of the rod 16 to act upon 16 rotating it so as to carry all of the loops 23 around behind the forward side of the member 20, Fig. 8, locking all such members in the manner indicated in Fig. 9, thus preventing any extractor being moved while the lever 2 is in use. It will be seen that when the arm 2 returns to normal position the extractors are all unlocked.

The central carriage X is so designed that it can only be rotated by the arm 2 in a counter-clock-wise direction, Fig. 2. For this purpose there is provided a set of pins 24, 25 and 26, etc., on the under side of the carriage, which work in conjunction with a latch having two fingers 27 and 28, see Figs. 2 and 3. Each of these pins is adapted to lock the carriage in any one of the six positions, corresponding to one of the six card cases in each tier. In the position shown in Fig. 2 the pin 24 is held by the fingers 27 and 28. Now when the lever 2 is moved to the left the pin 29 on the lever 2 engages the cleat 30 on the underside of the finger 27 and holds the finger 27 in engagement with the pin 24 while the second pin 31 on the lever 2 pushes the finger 28 away from the pin 24 against the tension of spring 32, Fig. 3 and at the same time stretching the spring 33. The pin 29 is made sufficiently broad so that it does not completely clear the cleat 30 on the finger 27 until after the finger 28 has cleared the pin 24. As soon as the cleat 30 is cleared the tension of spring 33 withdraws the finger 27 from engagement with the pin 24 thereby leaving the carriage subject to the action of the spring 37 through the medium of the lever 2. The spring 37 it will be seen has one end 38 secured to the carriage on which the cards are mounted, while the other end 39, which has associated with it a series of holes 40 about the shaft 41, may be moved about into engagement with any one of said holes to vary the tension of the spring. Pivoted on the lever 2 there is an arm 34 which constitutes the ratchet lever by means of which the arm 2 advances the carriage X step by step. This lever 34 is pivotally mounted on the arm 2 and is under the control of the spring 35 which normally holds the lever against the pin 36.

Referring to Figs. 1, 4, 5, 6, etc., it will be seen that on the inside of the door there is provided a set of ribs 42, 43, 44, etc., to which are secured the pieces 45, 46, etc. These pieces serve as tracks for the card extractor of which the knob 5, Fig. 8 is a part. Each of these pieces 45, etc., acts a guide for both the carriage that is located above it and for the one located below it. Each extractor carries a ratchet 48 which works in conjunction with the notches 49 in the track piece on the lower edge of the extractor. This insures a complete stroke of the extractor when once the stroke is started, after which it is restored to normal position by the tension in the spring 50 and the compression of the spring 51. Referring to

Fig. 6 and to the latch 7 in particular it will be noted that after the coin has operated to unlock the extractor carriage D the ridge 52 engages the wheel 53 on the latch raising the latch to release the coin which falls into the bottom of the case within a section partitioned off under the card carriage and in front of the slot 54 in the bottom part 55, Fig. 1, of the case through which the arm 2 passes. The boundaries of this coin receiving section are indicated in Fig. 2 by the partition 56. It will be understood, of course, that the latch 7 is so secured to the door that it can move only by rotating about the pin 58, Fig. 4, held by the U shaped piece 59 which is screwed to the door by the bolt 60, Fig. 6. This U piece has an arm 61 extending to the right, Fig. 6, against which the offset 62 on the latch strikes when the latch is not engaged by the lug 52. The latch is held in this latter position by the spring 63 which is held in place also by the bolt 60.

We will now describe the action of the extractor arm 8^a and of the mechanism which controls its operation. The arm 8^a is held pivoted to the extractor carriage D by the pin 64, Fig. 5, and is held in its forward position, Fig. 5, by the spring 66, which is coiled about the screw 67. But the arm 8^a has a pin 68 on its upper side which is controlled by a cam arrangement located on the track piece 46. It should be noted that this track piece has a flange 69, Fig. 5, in which there is an oblong somewhat oval slot 70. It will also be observed that in the forward rim of the flange 69 there is pivoted a cam latch 71. The pivot is the screws 72 about which there is coiled a spring 73 one end of which is fastened to the latch 71 at the pin 74 and the other end fastened to the flange itself at the pin 75. Now when the purchaser presses the knob 5 found to the left of Fig. 5, the pin passes into the passage between the tail piece 76 of the latch 71 and the outer rim of the flange 69, Figs. 8 and 5. This presses the arm 8^a forward so that the pin points 9^a on the arm engage the top card in the card holder forcing the card out for the customer. When the extractor reaches the limit of its stroke, the pin 68 clears the latch 71, and upon return stroke of the arm 8^a, is held back away from the cards. This action is, of course, repeated each time a coin is deposited and the extractor operated. The cards when they are pressed forward by the arm 8^a emerge from the card holder by way of the exit 10, Fig. 14 and thence through one of the slots 11 in the door. The adjustment of the tips 77 at the exit 10 is such as to steer the card straight for the slot 11. Also the flanges of the card case which terminate in the tips 77 are so adjusted that only one card at a time can pass through. The cards are always kept forward by the plate 78 Fig. 13 which is in turn kept pressed forward by the rod 79 under the compression of the spring 80. It will be noted that the plate 78 is slightly curved away from the commodity units. The curve is about a vertical axis. This means a reduction of friction between the cards. The break in the guide rail just in front of the exit 10, Fig. 14, is designed to prevent the commodity from being pinched and from rendering the removal of the article more difficult.

What I claim as my invention is:

1. The combination in the machine for dispensing commodity units of a door, a movable commodity holder and an extractor for removing units from the holder, a slot in said door to which said units are forced by said extractor, and guide means between the holder and the slot for directing each unit to the slot after it leaves the holder, said guide means consisting of an arm supported from the holder, and means for preventing the operation of the extractor while the holder is being moved.

2. In a commodity dispensing machine, a rotatable commodity holder carriage, a ratchet mechanism for rotating said holder, said mechanism including a hand operated and spring operated lever, and a spring for operating the lever, said spring having one end adjustable whereby the tension in the spring may be adjusted.

3. In a commodity dispensing machine, a rotatable commodity holding carriage, a ratchet mechanism for rotating said holder, said mechanism including a hand controlled lever, a ratchet in said mechanism mounted on said lever, said ratchet engaging a point on the carriage farther from the axis of rotation than the pivot point of the ratchet on the lever.

4. In a commodity dispensing machine, a commodity holder, a commodity extractor having access to commodities in said holder, an exit in said holder through which units of commodity are drawn by the extractor, a commodity guide rail on said holder, a plunger for keeping said units pressed against said rail, and a clearance in said rail at the forward end of said units for relieving the forward ends of the units from engagement with the rail, said extractor having movement only in a plane parallel to the surface of said holder.

5. The combination in a commodity dispensing machine of a commodity holder, a commodity extractor, an exit slot through which units of said commodity are drawn by said extractor, said holder having a spring controlled plunger for keeping said units automatically in proper relation to said extractor, and a plate between said plunger and the units, said plate having a

section depressed away from the units serving as a bearing for the plunger.

6. The combination in a machine for dispensing commodity units of a movable holder, an extractor for removing units from the holder, and cam means for controlling said extractor to press the extractor toward the commodity upon one stroke and away from the commodity upon a reverse stroke, and means for moving said holder relative to said extractor.

7. The combination in a machine for dispensing commodity units of a holder, an extractor for removing units from the holder, and cam means for controlling said extractor to press the extractor toward the commodity upon one stroke and away from the commodity upon a reverse stroke, said cam means having a latch for insuring against a reversal of a cycle of operation of the cam, and means for moving said holder relative to said extractor.

8. The combination in a machine for dispensing commodity units of an inclosing hood for the machine, a commodity holder and extractor for removing units from the holder within said hood, a slot in said hood to which said units are forced by said extractor, and guide means between the holder and the slot for directing each unit to the slot after it leaves the holder, said extractor having a commodity engaging point mounted upon a spring.

9. The combination in a machine for dispensing commodity units of a holder, an extractor for removing units from the holder, and cam means for controlling said extractor to press the extractor toward the commodity upon one stroke and away from the commodity upon a reverse stroke, said extractor having a commodity engaging point mounted upon a spring.

10. The combination in a machine for dispensing commodity units of a holder, an extractor for removing units from the holder, and cam means for controlling said extractor to press the extractor toward the commodity upon one stroke and away from the commodity upon a reverse stroke, said cam means having a latch for insuring against a reversal of a cycle of operation of the cam, said extractor having a commodity engaging point mounted upon a spring.

11. The combination in a commodity dispensing machine of a commodity holder, a commodity extractor, an exit slot through which said commodity units are drawn by said extractor, said holder having a spring controlled plunger for keeping said commodity automatically in proper relation to said extractor, a latch for latching the extractor, means for releasing the latch, and means upon the extractor for engaging means upon the latch to hold the latter open during operation of the extractor, said last means consisting of a wheel mounted upon the latch.

12. In a commodity dispenser, a commodity carrier, a lever for operating the same, a plurality of commodity extractors associated therewith, a set of latches, one for each extractor mounted upon a pivoted member, said pivoted member controlled by said lever to latch each one of said extractors independently when the lever is being operated, and a latch for latching said lever, said latch mounted upon a second member having an arm for each extractor, each arm subject to the control of each extractor, whereby when an extractor is operated the said member is moved to lock said lever.

13. The combination in a machine for dispensing commodity units of a holder, an extractor for removing units from the holder, cam means for controlling said extractor to press the extractor toward the commodity upon one stroke and away from the commodity upon a reverse stroke, and a ratchet and pawl mechanism for insuring against the return movement of the extractor before a stroke has been completed, said ratchet having an extension upon which said cam means is mounted.

14. The combination in a machine for dispensing commodity units of a holder, an extractor for removing units from the holder, cam means for controlling said extractor to press the extractor toward the commodity upon one stroke and away from the commodity upon a reverse stroke, said cam means having a latch for insuring against a reversal of a cycle of operation of the cam, and a ratchet and pawl mechanism for insuring against a return movement of the extractor before a stroke has been completed, said ratchet having an extension arm upon which said latch has mounted.

Signed by me at Chicago, Cook county, Illinois, this 8th day of March, 1917.

CHARLES B. WRIGHT.